

REMARKS

The Final Office Action mailed October 22, 2007 has been received and reviewed.

Claims 23-27 and 29-64 are currently pending in the above-referenced application. Of these, claims 36-39 and 52 have been withdrawn from consideration, while claims 23-27, 29-35, 40-51, and 53-64 have been considered and stand rejected.

Reconsideration of the above-referenced application is respectfully requested.

Rejections under 35 U.S.C. § 112, First Paragraph

Claims 23 and 45 have been rejected for purportedly failing to meet the written description requirement of the first paragraph of 35 U.S.C. § 112.

Independent claims 23 and 45 are both drawn to methods for assembling semiconductor devices. Both of these claims recite that, at some point during the process, a second semiconductor device is entirely supported by discrete conductive elements that are located over portions of a first semiconductor device.

FIG. 14 of the as-filed application illustrates an embodiment in which a semiconductor device 30b is entirely supported by intermediate conductive elements 38a that are located at least partially over another semiconductor device 30a. *See also* paragraphs [0015] and [0059]. The intermediate conductive elements 38a are the only things between the semiconductor devices 30a and 30b. Thus, in the embodiment that has been illustrated in FIG. 14 and described with reference to that figure, the intermediate conductive elements 38a are the only thing that could support the upper semiconductor device 30a.

It has been improperly assumed that the upper semiconductor device 30b could not rest upon and be fully supported by the intermediate conductive elements 38a without causing electrical shorting between the intermediate conductive elements. This assertion ignores the fact that during assembly, no power or signals will be conveyed through the intermediate conductive elements 38a and, as a consequence, no electrical shorting could occur at that point in time. Further, the Office's assertion ignores the possibility that the back side of the upper semiconductor device 30a may comprise an electrically insulative material, which would prevent

shorting between intermediate conductive elements 38a regardless of whether power or signals are being conveyed by the intermediate conductive elements 38a.

In view of the foregoing, it is apparent that the as-filed application provides an adequate written description of the subject matter recited in independent claims 23 and 45. As these claims comply with the adequate written description requirement of the first paragraph of 35 U.S.C. § 112, the 35 U.S.C. § 112, first paragraph, rejections of independent claims 23 and 45 should be withdrawn, and both of these claim should be allowed.

Rejections under 35 U.S.C. § 112, Second Paragraph

Claims 23 and 45 have also been rejected under 35 U.S.C. § 112, second paragraph, for reciting subject matter that is allegedly indefinite. Specifically, the Office asserts, “it is confusing to understand how the discrete elements (wires) can support the entire weight of the semiconductor device since this aspect is not disclosed...” Final Office Action, page 3.

Again, the as-filed specification does disclose method embodiments in which a semiconductor device is entirely supported by discrete conductive elements that are located at least partially over another semiconductor device. *See, e.g.*, paragraphs [0015] and [0059]; FIG. 14. Regardless of the embodiments disclosed in the as-filed specification, it is respectfully submitted that one of ordinary skill in the art would readily understand the scope of independent claims 23 and 45 from the plain language recited in these claims.

Withdrawal of the 35 U.S.C. § 112, second paragraph, rejections of claims 23 and 45 is respectfully requested, as is the allowance of both of these claims.

Rejections under 35 U.S.C. § 102

Claims 23, 24, 29, 30, 33, 40, 45, 46, 49, 50, 53, 59 and 61-64 stand rejected under 35 U.S.C. § 102(e) for being drawn to subject matter that is allegedly anticipated by the subject matter described in U.S. Patent 6,400,007 to Wu et al. (hereinafter “Wu”).

A claim is anticipated only if each and every element, as set forth in the claim, is found, either expressly or inherently described, in a single reference which qualifies as prior art under 35 U.S.C. § 102. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053

(Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Independent claim 23 recites, among other things, “positioning a second semiconductor device at least partially over [a] first semiconductor device, a back side of the second semiconductor device *resting upon at least some . . . discrete conductive elements and being entirely supported thereby . . .*” (emphasis supplied). Independent claim 45 recites, among other things, “positioning a second semiconductor device at least partially over [a] first semiconductor device and on at least some discrete conductive elements . . . such that *the second semiconductor device is entirely supported by the at least some discrete conductive elements . . .*”

“All words in a claim must be considered in judging the patentability of a claim against the prior art.” M.P.E.P. § 2173.06, *citing In re Wilson*, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970). In this case, the Office cannot ignore the requirements of independent claims 23 and 45 that a second semiconductor device be “entirely supported” by discrete conductive elements.

It has been asserted that FIG. 4 of Wu shows wires 32 supporting the second semiconductor die 34. The description of Wu is limited to disposing wires 32 *and glue* over a lower semiconductor device 28 before positioning an upper semiconductor device 34 thereover. *See, e.g.*, col. 3, lines 27-43. In view of the conclusion by the Board of Patent Appeals and Interferences (hereinafter “the Board”), as set forth at page 5 of its Decision of September 12, 2006, that, in the method described in Wu, both bond wires *and glue* support the upper semiconductor device, it is apparent that the upper semiconductor die 34 is not “entirely supported” by the wires 32, as would be required for Wu to anticipate each and every element of both independent claim 23 and independent claim 45. It is, therefore, respectfully submitted that, under 35 U.S.C. § 102(e), independent claims 23 and 45 are both drawn to subject matter that is allowable over the subject matter described in Wu.

Each of claims 24, 29, 30, 33, and 40 is allowable, among other reasons, for depending either directly or indirectly from claim 23, which is allowable.

Each of claims 46, 49, 50, 53, 59, and 61-64 is allowable, among other reasons, for depending either directly or indirectly from claim 45, which is allowable.

In view of the foregoing, it is respectfully requested that the 35 U.S.C. § 102(e) rejections of claims 23, 24, 29, 30, 33, 40, 45, 46, 49, 50, 53, 59, and 61-64 be withdrawn, and that each of these claims be allowed.

Rejections under 35 U.S.C. § 103(a)

Claims 25-27, 31, 32, 34, 35, 41-44, 47, 48, 51, 54-58, and 60 stand rejected under 35 U.S.C. § 103(a).

Wu in View of Lee

Claims 25, 26, 31, 34, 35, 41-44, 47, 51, 54-58, and 60 stand rejected under 35 U.S.C. § 103(a) for reciting subject matter that is assertedly unpatentable over the subject matter taught in Wu, in view of teachings from U.S. Patent 6,388,313 to Lee et al. (hereinafter "Lee").

Claims 25, 26, 31, 34, 35, and 41-44 are each allowable, among other reasons, for depending indirectly from claim 23, which is allowable.

Wu in View of Shim

Claims 27, 32 and 48 stand rejected under 35 U.S.C. § 103(a) for being directed to subject matter that is purportedly unpatentable over the teachings of Wu, in view of teachings from U.S. Patent 6,531,784 to Shim et al. (hereinafter "Shim").

Claims 27 and 32 are both allowable, among other reasons, for depending indirectly from claim 23, which is allowable.

Claim 48 is allowable, among other reasons, for depending indirectly from claim 45, which is allowable.

Withdrawal of the 35 U.S.C. § 103(a) rejections of claims 25-27, 31, 32, 34, 35, 41-44, 47, 48, 51, 54-58, and 60 is respectfully requested, as is the allowance of each of these claims.

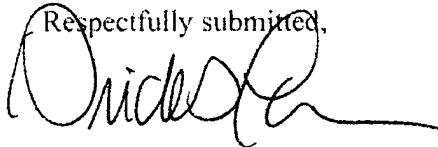
ELECTION OF SPECIES REQUIREMENT

It is respectfully submitted that independent claims 23 and 45 remain generic to all of the species of invention that were identified in the Election of Species Requirement in the above-referenced application. In view of the allowability of these claims, claims 36-39 and 52, which have been withdrawn from consideration, should also be considered and allowed.

M.P.E.P. § 806.04(d).

CONCLUSION

It is respectfully submitted that each of claims 23-27 and 29-64 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,


Brick G. Power
Registration No. 38,581
Attorney for Applicant
TRASKBRITT, PC
P.O. Box 2550
Salt Lake City, Utah 84110-2550
Telephone: 801-532-1922

Date: December 21, 2007
BGP/dn:ec
Document in ProLaw